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Applicants: MIYA *et al.*	Atty. Dkt.: MINB-02011
Serial No.: 10/681,369	Art Unit: 2836
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Title: DISCONNECT PROTECTION STRUCTURE FOR ROTARY TRANSFORMER-TYPE RESOLVER	

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P.O. Box 1450
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APPEAL BRIEF UNDER 37 CFR §41.31

Sir:

The appellants hereby submit one copy of a Brief on Appeal under 37 C.F.R. §41.31.

1. REAL PARTY IN INTEREST

The real party in interest is Minebea Co., Ltd., the assignee of record.

2. RELATED APPEALS AND INTERFERENCES

There is no known related appeal or interference that will directly affect, that will be directly affected by, or that will have a bearing on the Board's decision on this appeal.

3. STATUS OF CLAIMS

Claims 1-16 are pending in the present application and are included in the attached Appendix A. Claims 1-16 have been finally rejected and are now being appealed.

4. STATUS OF AMENDMENTS

No amendments to the claims were filed subsequent to the final rejection. A Request for Reconsideration was filed on 3 August 2006, after the final rejection; however, the Request for Reconsideration did not include claim amendments.

5. SUMMARY OF CLAIMED SUBJECT MATTER

In the following summary, parts of the claims are corresponded with reference numbers from the illustrated embodiments for ease of understanding.

Claim 1

Claim 1 is described with reference to Figs. 1-7 and is intended to cover all four of the illustrated embodiments. Claim 1 includes a rotary transformer type resolver (unnumbered), an example of which is shown in Fig. 1. The resolver has an inner core (62) on which a rotary transformer output winding (65) is wound (See paragraph 0020; page 7, lines 19-21) and a resolver rotor (63) on which resolver excitation windings (64) are wound (See paragraph See paragraph 0022; page 8, lines 11-13). The resolver includes a disconnect protection structure (611, 612, 613) for a crossover lead (60) that connects the rotary transformer output winding (65) and the resolver excitation windings (64). See paragraphs 0019 and 0022; page 8, line7 to page 9, line 8; and Figs. 2-7.

The disconnect protection structure (611, 612, 613) includes an insulating tube apparatus (611, 612, 613) that covers the crossover lead (60) and that has outermost ends (611a, 613b) secured to the crossover lead (60). See paragraphs 0019 and 0022; page 8, lines 19-23; page 10, line20, to page 11, line 6. The disconnect protection structure further includes thermal expansion coefficient absorption means (611b, 612a, and e, c, d of Figs. 1-7) for absorbing a difference between thermal expansion coefficients of the crossover lead (60) and the insulating tube apparatus to inhibit disconnection of the crossover lead from the rotary transformer output winding (65) and the resolver excitation windings (64). See paragraphs 0022, 0024, 0025, 0026, and 0028; page 8, line 11 to page 13, line 13.

The structures disclosed in the specification that correspond to the thermal expansion coefficient absorption means are the gap e, the cutout c, and the overlap distance d and the adjacent ends of the insulation tubes 611b, 612a that form the gap e or the overlap distance d. The gap e is discussed at least on page 8, line 23 to page 9, line 3 and page 10, lines 4-12. The cutout c is discussed at least on page 11, lines 17-20. The overlap distance d is discussed at least on page 13, lines 4-13. The gap e, the cutout c, and the overlap distance d and the adjacent ends of the insulation tubes 611b, 612a that form the gap e or the overlap distance d are illustrated in Figs. 2-7.

Claim 7

Independent claim 7 includes a disconnect protection structure (611, 612, 613 of Figs. 1-4, 6, and 7) for housing a rotary transformer type resolver crossover lead (60). See paragraphs 0019 and 0022. Claim 7 is intended to cover all embodiments except the embodiment of Fig. 5. Thus, the subject matter of claim 7 is described at least in paragraphs 0018-0025 and 0028-0031 and is shown in Figs. 1-4, 6, and 7.

The disconnect protection structure of claim 7 includes an insulating tube apparatus (611, 612, 613) that covers the crossover lead (60) and that has outermost ends (611a, 613b) secured to the crossover lead (60). See paragraphs 0019 and 0022; page 8, lines 19-23; page 10, line20, to page 11, line 6.

The insulating tube apparatus (611, 612, 613) is divided into a plurality of insulating tube units (611, 612, 613) to enable the insulating tube units to absorb a difference between thermal expansion coefficients of the crossover lead (60) and the insulating tube apparatus (611, 612, 613) and to thereby inhibit disconnection of the crossover lead (60). See page 8, line19 to page 9, line 3 and page 13, lines 4-13.

Claim 8

Claim 8 is dependent on claim 7. Claim 8 is intended to cover embodiments like the embodiment of Figs 1-4, which are described at paragraphs 0018-0025 of the specification. In claim 8, adjacent ones of the plurality of insulating tube units (611, 612, 613) are separated by a predetermined space (e) to enable the plurality of insulating tube units (611, 612, 613) to expand or contract in response to temperature changes to absorb the difference between the thermal expansion coefficients of the crossover lead (60) and the insulating tube apparatus (611, 612, 613). As a result the disconnection of the crossover lead (60) is inhibited. See page 8, line 19 to page 9, line 3.

Claim 9

Claim 9 is dependent on claim 7. Claim 9 is intended to cover embodiments like the embodiment of Figs 6 and 7, which are described at paragraphs 0028-0031 of the specification. In claim 9, adjacent ends (611b, 612a) of the plurality of insulating tube units (612, 611) overlap one another over a predetermined distance (d). The predetermined distance (d) changes in response to shifting of the plurality of insulating tube units (612, 611) relative to one another due to temperature changes. See page 12, line 19 to page 14, line 5.

Claim 10

Claim 10 is dependent on claim 7. Claim 10 is intended to cover the embodiment of Fig 6. In claim 10, a first one (612) of the plurality of insulating tube units (612, 611) has a first diameter that defines a predetermined distance (d) and a second tapered diameter that is smaller than the first diameter. A second one (611) of the plurality of insulating tube units (612, 611) is set into the first one (612) of the plurality of tube units (612, 611) by a distance no greater than the predetermined distance (d) to enable the plurality of insulating tube units (612, 611) to shift

relative to one another in response to temperature changes. See paragraphs 0028 and 0029 or page 12, line 19 to page 14, line 5.

Claim 11

Independent claim 11 includes a disconnect protection structure (611, c) for housing a rotary transformer type resolver crossover lead (60). Claim 11 is intended to cover the embodiment of Fig. 5, which shows the cutout c.

The disconnect protection structure (611, c) of claim 11 includes a unitary insulating tube (611) that covers the crossover lead (60) and that has outermost ends (611a, 611b) secured to the crossover lead (60). See Figs. 1 and 5 and page 11, line 14, to page 12, line 18.

The disconnect protection structure (611, c) of claim 11 includes a disconnect stress absorbing cutout portion (c) formed in the unitary insulating tube (611) for absorbing a difference between thermal expansion coefficients of the crossover lead (60) and the unitary insulating tube (611) to thereby inhibit disconnection of the crossover lead (60). This feature is described in paragraph 0025. More specifically, this feature is described at page 11, lines 17-20 of the specification.

Claim 16

Claim 16 is dependent on claim 7. Claim 16 is intended to cover the embodiments of Figs 1-4, 6 and 7. In other words, this claim is not intended to cover the embodiment of Fig. 5. In claim 16, the insulating tube units (611, 612, 613) are arranged in series in an end-to-end relationship. See Fig. 4 and page 8, lines 7-10.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-16 rejected under 35 USC 103(a) as being unpatentable over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

7. ARGUMENT

A. Whether claims 1-6 and 15 are unpatentable under 35 USC 103(a) over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

All the claim limitations are not taught or suggested by the prior art references in combination. The combination of Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger used to reject claims 1-6 and 15 fails to include or suggest all of the claim limitations, as explained in more detail below. Therefore, this rejection should be reversed.

As stated in the first office action, the patent to Dulin *et al.* discloses a rotary transformer type resolver and a crossover 70. However, as also stated in the first office action, the patent to Dulin *et al.* fails to disclose a disconnect protection structure. The appellants do not dispute the examiner's assessment of Dulin *et al.*

The Japanese publication to Murakami *et al.* discloses a rotary transformer in which tubes 4, through which leads 3 pass, are bonded at one end to a ferrite core 1 of the transformer. Claim 1 recites an insulating tube that covers the crossover lead and that has outermost ends secured to the crossover lead. However, contrary to what is stated in the office action, the Murakami *et al.* reference fails to disclose "outermost ends" of an insulation tube apparatus being secured to a crossover lead. In addition, the tubes 4 are not parts of an insulation tube apparatus; rather, they are apparently independent, parallel insulation tubes. Also, the leads 3 and tubes 4 are not part of a crossover of a rotary transformer type resolver.

While one end of each of the tubes 4 is bonded to the ferrite core 1, there is nothing to indicate that the ends of the tubes are bonded to the wire, or lead, as in the claimed resolver. In Figure 5, the epoxy 25 appears to contact the wire 23; however, there is nothing to confirm that the wire 23 is actually bonded to the tube 24. In any event, even if the wire 23 is bonded to the

tube 24 in Fig. 5 of Murakami *et al.*, the tubes 24 are not parts of a single insulating tube apparatus.

The examiner states in the final office action that the Murakami *et al.* publication shows a disconnection protection structure. However, the Murakami *et al.* reference fails to disclose "thermal expansion coefficient absorption means" that correspond to the structure disclosed in the specification of the present application, according to section 112, paragraph 6. This limitation was not treated as a 112 paragraph 6 limitation in any of the office communications.

Although it is not clear what elements of the Murakami *et al.* publication are being relied on and what elements of Berger are being relied on to show the "disconnection protection structure" including the "thermal expansion coefficient absorption means," it must be that the examiner is relying on Murakami *et al.* publication to show the "disconnection protection structure" since the examiner admits that the Dulin *et al.* patent fails to show a disconnection protection structure, and Berger does not disclose a crossover lead or anything relating to an insulation tube. However, the Murakami *et al.* publication merely discloses tubes 4 bonded at one end to the core 1. Only one end of each tube 4 is bonded in the Figures of Murakami *et al.* The tubes 4 are independent and are not parts of "an insulating tube apparatus" as claimed. That is, the bonded ends of the tubes 4 are not "outermost ends" of an insulating tube apparatus. Thus, a combination of Dulin *et al.* and Murakami *et al.* fail to satisfy the limitations of claim 1.

The Berger reference adds nothing to the combination of Dulin *et al.* and Murakami *et al.* insofar as meeting the terms of the claims. The patent to Berger discloses an electrical resolver. However, the Berger patent fails to disclose a crossover lead wire or an insulation tube apparatus. Berger discusses thermal expansion only generally in the context of a mechanical arrangement of

a rotor, but no details are provided as to exactly how the parts in Berger react to thermal expansion and contraction.

In the advisory action, the examiner explains that

> "...if an sleeve made of a material with the apropriate [sic] thermal coefficient expansion (taught by Berger) is used to cover a cable (crossover) that is used in a disconnect protection structure of a crossover (taught by Murakami et al.); and if this crossover cover with a material with a thermal coefficient expansion is used in a device comprising a rotary transformer, a resolver rotor and a crossover lead that connects the rotary transformer and the resolver (taught by Dulin et al.) the result is the disconnect protection structure for rotary transformer-type resolver claimed by applicant."

This explanation is difficult to understand and it fails to treat the means-plus-function limitation of claim 1 in accordance with section 112, paragraph 6. Further, this explanation fails to properly interpret the Berger reference.

The examiner's reliance on Berger is not understandable. The examiner cites col. 1, lines 40-50 of Berger to support the rejection. However, col. 1, lines 40-50 merely states that, as background information, thermal expansion between mechanical parts causes stress and can change operating characteristics of a device. There is no mention of a crossover lead or an insulation tube or any structure that relates to the claimed invention. There is nothing in the Berger patent about accommodating motion caused by this effect in an insulation tube with structures such as a gap, a cutout or an overlap. Although wiring is shown in the Berger patent, there is no discussion of how it is affected by thermal expansion.

While the Berger patent is apparently being relied on to show or suggest the "thermal expansion coefficient absorption means," the Berger patent fails to disclose such a means. The Berger patent discloses a rotor and stator arrangement that reduces the effects of thermal expansion. See col. 1, line 65, through col. 2, line 3. Although the examiner seems to be

applying some feature of Berger to the combination of Dulin et al. and Murakami *et al.* there is no clear explanation of exactly what feature of the Berger apparatus has been added to the combination of teachings in the office actions or the advisory action. If the rotor and stator arrangement of the Berger patent were applied to the combination of Dulin *et al.* and Murakami *et al.*, the resulting device would have an improved rotor and stator structure, but there would be no change regarding the crossover and the insulation tube apparatus.

Because the combination of Dulin et al. and Murakami *et al.* and Berger fails to meet the claim limitations, the rejection of claim 1 should be reversed.

Claims 2-6 and 15 depend on claim 1 and are thus patentably distinguished from the combination of the Dulin *et al.* patent, the Murakami *et al.* reference and Berger for the reasons given above with respect to claim 1.

In addition to the fact that the combination of references set forth in the final office action fails to include all the claimed elements, there is no reason for one of ordinary skill in the art to have made such a combination. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Also, there must also be a reasonable expectation of success. Furthermore, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

There is no benefit in adding the tubes of Murakami *et al.* to the rotary transformer of Dulin *et al.* The reason given by the examiner for the combination of Murakami *et al.* and Dulin *et al.* is to "provide a sleeve to cover the crossover lead to provide insulation and rigidez [sic]; which mechanically reinforces the moving parts of the rotary transformer." It appears that the

crossover lead 70 of Dulin *et al.* already has an insulation sleeve, and rigidity is disadvantageous for the reasons explained in the background section of the present application. If the crossover is rigid, thermal stresses may cause a disconnection failure. Therefore, there is no motivation to have made the combination of Murakami *et al.* and Dulin *et al.*, and the rejection of claim 1 and its dependents should be reversed.

B. Whether claim 7 is unpatentable under 35 USC 103(a) over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

The arguments concerning independent claim 7 are similar to those concerning claim 1. However, one significant way in which claim 7 differs from claim 1 is that claim 7 has no §112 paragraph 6 elements.

All the claim limitations of claim 7 are not taught or suggested by the combination of prior art references. The combination of Dulin *et al.*, the Japanese publication of Murakami *et al.*, and Berger used to reject claims 7-10 fails to include or suggest all of the claim limitations as explained in more detail below. Therefore, this rejection should be reversed.

The appellants do not dispute the examiner's assessment of the patent to Dulin *et al.* That is, the Dulin *et al.* reference shows a rotary transformer type resolver with excitation windings, output windings, and a crossover lead 70. The appellants dispute the examiner's view that a combination of Dulin *et al.*, Murakami *et al.* and Berger would meet the terms of claim 7.

The examiner asserts in the final office action that a combination of Murakami *et al.* and Dulin *et al.* would have an insulating tube apparatus divided into a plurality of insulating tube units. The examiner does not indicate specifically where the plurality of insulating tube units exist in the prior art, but it appears that the examiner is incorporating the separate and independent tubes 4 of the Murakami *et al.* reference into the resolver of the Dulin *et al.* reference. However, the independent tubes 4 of Murakami *et al.* do not form a tube apparatus

that covers a crossover lead. The most that one of ordinary skill in the art could take from Murakami *et al.* would have been to cover the crossover lead 70 of Dulin *et al.* with one of the tubes 4 and to secure the end of the tube 4 to a core of the resolver. If this is done, the terms of claim 7 are not satisfied, since the combination would fail to include an insulating tube apparatus divided into a plurality of insulating tube units. Therefore, this rejection should be reversed.

The patent to Berger is apparently being relied on in the rejection of claim 7 to show or suggest something that absorbs a difference between thermal expansion coefficients; however, Berger does not teach anything with respect to an insulation tube or anything similar or analogous to an insulation tube.

As argued above, the Berger patent discloses a resolver that apparently reduces the effects of thermal expansion with the arrangement of the rotor parts. If the rotor arrangement of the Berger patent were applied to the combination of Dulin *et al.* and Murakami *et al.*, the rotor of the resulting device might have an improved mechanical structure, but there would be no change regarding the crossover and the insulation tube apparatus. Therefore, the examiner's reliance on the Berger patent is not understandable.

Further, as mentioned above with respect to claim 1, there is no motivation to combine the teachings of Dulin *et al.* with those of Murakami *et al.* Therefore, the rejection of claim 7 should be reversed.

C. Whether claim 8 is unpatentable under 35 USC 103(a) over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

In addition to the reasons given above with respect to claim 7, claim 8 should be patentable for the additional features that it recites. All the claim limitations of claim 8 are not taught or suggested by the prior art references in combination. The combination of Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger used to reject claim 8 fails to

include or suggest all of the claim limitations as explained in more detail below. Therefore, this rejection should be reversed.

Claim 8 calls for adjacent ones of the plurality of insulating tube units to be separated by a predetermined space to enable the plurality of insulating tube units to expand or contract in response to temperature changes. In the final rejection, the examiner relies on the patent to Berger for this feature. However, as mentioned above, the Berger patent discloses a hub and sleeve arrangement that has nothing to do with wiring or insulation tubes. Therefore, the patent to Berger does not teach the limitations of claim 8 in the prior art combination, and this rejection should be reversed.

Further, as argued with respect to claim 1, in addition to the fact that the combination of references set forth in the final office action fails to include all the elements of claim 8, there is no motivation for one of ordinary skill in the art to have made such a combination. Therefore, this rejection should be reversed.

D. Whether claim 9 is unpatentable under 35 USC 103(a) over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

In addition to the reasons given above with respect to claim 7, claim 9 should be patentable for the additional features that it recites. All the claim limitations of claim 9 are not taught or suggested by the prior art references in combination. The combination of Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger used to reject claim 9 fails to include or suggest all of the claim limitations as explained in more detail below. Therefore, this rejection should be reversed.

Claim 9 recites that adjacent ends of the plurality of insulating tube units overlap one another over a predetermined distance. The predetermined distance changes in response to shifting of the insulating tube units relative to one another due to temperature changes. The final

office action fails to point out exactly where in the prior art overlapping tubes are disclosed or suggested. The appellants cannot find this feature anywhere in the cited references. It is the appellants' position that none of the prior art references discloses or suggests this feature. Thus, the combination cannot include this feature, and the rejection of claim 9 should be reversed.

Further, as argued with respect to claim 1, in addition to the fact that the combination of references set forth in the final office action fails to include all the elements of claim 9, there is no motivation for one of ordinary skill in the art to have made such a combination. Therefore, this rejection should be reversed.

E. Whether claim 10 is unpatentable under 35 USC 103(a) over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

In addition to the reasons given above with respect to claim 7, claim 10 should be patentable for the additional features that it recites. All the claim limitations of claim 10 are not taught or suggested by the prior art references in combination. The combination of Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger used to reject claim 10 fails to include or suggest all of the claim limitations as explained in more detail below. Therefore, this rejection should be reversed.

Claim 10 recites that a one of the insulating tube units has a first diameter and a second tapered diameter. A second one of the insulating tube units is set into the first one to enable the insulating tube units to shift relative to one another in response to temperature changes. The final office action fails to point out exactly where in the prior art one insulating tube unit has two diameters so that one tube unit can be set into one another. The appellants cannot find this feature anywhere in the cited references. It is the appellants' position that none of the prior art references, alone or in combination, discloses or suggests this feature. Therefore, the rejection of claim 10 should be reversed.

Further, as argued with respect to claim 1, in addition to the fact that the combination of references set forth in the final office action fails to include all the elements of claim 10, there is no motivation for one of ordinary skill in the art to have made such a combination. Therefore, this rejection should be reversed.

F. Whether claim 16 is unpatentable under 35 USC 103(a) over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

In addition to the reasons given above with respect to claim 7, claim 16 should be patentable for the additional features that it recites. All the claim limitations of claim 16 are not taught or suggested by the prior art references in combination. The combination of Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger used to reject claim 16 fails to include or suggest all of the claim limitations as explained in more detail below. Therefore, this rejection should be reversed.

Claim 16 recites that the insulating tube units are arranged in series in an end-to-end relationship. In the final rejection, the examiner states that Murakami *et al.* shows this feature. However, Murakami *et al.* shows independent tubes 4 that are not arranged end-to-end. The examiner fails to explain this discrepancy.

Since the combination of Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger fails to show or suggest insulation tubes placed in an end-to-end relationship, this rejection should be reversed.

Further, as argued with respect to claim 1, in addition to the fact that the combination of references set forth in the final office action fails to include all the elements of claim 16, there is no motivation for one of ordinary skill in the art to have made such a combination. Therefore, this rejection should be reversed.

G. Whether claims 11-14 are unpatentable under 35 USC 103(a) over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger.

The arguments concerning independent claim 11 are similar to those concerning claim 1. However, one significant way in which claim 11 differs from claim 1 is that claim 11 has no §112 paragraph 6 elements.

All the claim limitations of claim 11 are not taught or suggested by the combination of prior art references. The combination of Dulin *et al.*, the Japanese publication of Murakami *et al.*, and Berger used to reject claims 11-14 fails to include or suggest all of the claim limitations as explained in more detail below. Therefore, this rejection should be reversed.

As mentioned above, the appellants do not dispute the examiner's assessment of the patent to Dulin *et al.* That is, the Dulin *et al.* reference shows a rotary transformer type resolver with excitation windings, output windings, and a crossover lead 70. The appellants dispute the examiner's view that a combination of Dulin *et al.*, Murakami *et al.* and Berger would meet the terms of claim 11.

Claim 11 recites a unitary insulating tube that covers the crossover lead and that has outermost ends secured to the crossover lead. Although the examiner apparently relies on the Murakami *et al.* reference to show a unitary insulating tube, the prior art diagram of Fig. 8 shows this feature as does the Dulin *et al.* reference. The tubes 4 shown by the Murakami reference do not appear to be for a crossover lead. Therefore, the reliance on Murakami *et al.* is inappropriate and unnecessary.

Claim 11 further recites the following:

> a disconnect stress absorbing cutout portion formed in the unitary insulating tube for absorbing a difference between thermal expansion coefficients of the crossover lead and the unitary insulating tube to thereby inhibit disconnection of the crossover lead

The final rejection seems to imply that while the cutout is not shown in the combination of Dulin *et al.*, Murakami *et al.* and Berger, the cutout would be obvious. The reason for this was given as follows:

> "It is known in the art that in order to change the physical characteristics or behavior of an insulating tube regarding the thermal expansion coefficient, they can be varied in amount and their gap, shape, connected in different ways, having different type of cutouts to get the air contributing to the change of the thermal expansion coefficient"

Thus, while the prior art fails to show or suggest the cutout, the examiner thinks it is obvious and has rejected the claim based on that unsupported opinion. The appellants submit that it is improper to reject a claim without some indication or suggestion of the claimed elements in the prior art. The examiner has failed to point out any disclosure or suggestion in the cited references of the claimed cutout.

None of the cited references shows a cutout in a unitary insulation tube as claimed. Therefore, any apparatus that results from a combination of the references cannot include such a cutout. For this reason, the rejection of claims 11-14 should be reversed.

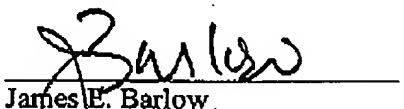
Further, as argued with respect to claim 1, in addition to the fact that the combination of references set forth in the final office action fails to include all the claimed elements, there is no motivation for one of ordinary skill in the art to have made such a combination. Therefore, the rejection of claim 11 should be reversed.

8. CONCLUSION

In summary, based on the comments above, the appellants respectfully submit that claims 1-16 are patentable over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger. The Examiner's rejection of claims 1-16 on these grounds is therefore improper and should be reversed.

If there are any problems with the payment of fees, please charge any underpayments and credit any overpayments to Deposit Account No. 01-0305.

Respectfully submitted,



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APPENDIX A – LISTING OF THE CLAIMS

1. In a rotary transformer type resolver having an inner core on which a rotary transformer output winding is wound and a resolver rotor on which resolver excitation windings are wound, a disconnect protection structure for a crossover lead that connects the rotary transformer output winding and the resolver excitation windings, the disconnect protection structure comprising:

an insulating tube apparatus that covers the crossover lead and that has outermost ends secured to the crossover lead; and

thermal expansion coefficient absorption means for absorbing a difference between thermal expansion coefficients of the crossover lead and the insulating tube apparatus to thereby inhibit disconnection of the crossover lead from the rotary transformer output winding and the resolver excitation windings.

2. The disconnect protection structure of claim 1, wherein

the insulating tube apparatus is separated into a plurality of insulating tube units, and

only a leftmost end of an outer left insulating tube unit and a rightmost end of an outer right insulating tube unit are respectively secured to the crossover lead.

3. The disconnect protection structure of claim 2, wherein the thermal expansion coefficient absorption means comprises adjacent ends of the insulating tube units and a

predetermined gap defined between the adjacent ends, the plurality of insulating tube units thereby being capable of expanding or contracting in response to temperature changes.

4. The disconnect protection structure of claim 2, wherein the thermal expansion coefficient absorption means comprises adjacent overlapping ends of the plurality of insulating tube units.

5. The disconnect protection structure of claim 1, wherein the thermal expansion coefficient absorption means comprises at least one cutout portion formed on the insulating tube apparatus.

6. The disconnect protection structure of claim 5, wherein the insulating tube apparatus is bent to define an elbow, and the cutout portion is located at the elbow.

7. A disconnect protection structure for housing a rotary transformer type resolver crossover lead, comprising:

an insulating tube apparatus that covers the crossover lead and that has outermost ends secured to the crossover lead, wherein

the insulating tube apparatus is divided into a plurality of insulating tube units to enable the insulating tube units to absorb a difference between thermal expansion coefficients of the crossover lead and the insulating tube apparatus and to thereby inhibit disconnection of the crossover lead.

8. The disconnect protection structure of claim 7, wherein adjacent ones of the plurality of insulating tube units are separated by a predetermined space to enable the plurality of insulating tube units to expand or contract in response to temperature changes to absorb the difference between the thermal expansion coefficients of the crossover lead and the insulating tube apparatus and to thereby inhibit the disconnection of the crossover lead.

9. The disconnect protection structure of claim 7, wherein adjacent ends of the plurality of insulating tube units overlap one another over a predetermined distance, the predetermined distance changing in response to shifting of the plurality of insulating tube units relative to one another due to temperature changes.

10. The disconnect protection structure of claim 7, wherein a first one of the plurality of insulating tube units has a first diameter that defines a predetermined distance, and a second tapered diameter that is smaller than the first diameter, a second one of the plurality of insulating tube units being set into the first one of the plurality of tube units by a distance no greater than the predetermined distance to enable the plurality of insulating tube units to shift relative to one another in response to temperature changes.

11. A disconnect protection structure for housing a rotary transformer type resolver crossover lead, comprising:

a unitary insulating tube that covers the crossover lead and that has outermost ends secured to the crossover lead; and

a disconnect stress absorbing cutout portion formed in the unitary insulating tube for absorbing a difference between thermal expansion coefficients of the crossover lead and the unitary insulating tube to thereby inhibit disconnection of the crossover lead.

12. The disconnect protection structure of claim 11, wherein ends of the unitary insulating tube are respectively secured to the crossover lead.

13. The disconnect protection structure of claim 11, wherein the unitary insulating tube is bent to define an elbow, and the disconnect stress absorbing cutout portion is located at the elbow.

14. The disconnect protection structure of claim 11, further comprising at least one additional disconnect stress absorbing cutout portion formed on the unitary insulating tube.

15 The disconnect protection structure of claim 2, wherein the insulating tube units are arranged in series in an end-to-end relationship.

16 The disconnect protection structure of claim 7, wherein the insulating tube units are arranged in series in an end-to-end relationship.

APPENDIX B – EVIDENCE

None.

APPENDIX C – RELATED PROCEEDINGS

None.